

GENERAL INDEX TO VOLUME XX

New scientific names of plants and the final members of new combinations are printed in bold face type; synonyms and page numbers having reference to figures and plates, in *italics*; and previously published scientific names and all other matter, in ordinary type.

A

- Acarospora molybdina*, 20; *peltasticta*, 20; *Schleicheri*, 20
- Achaetogeron*, 23
- Acrostichum areolatum*, 69
- Actinea Richardsonii*, 797
- Adiantum*, 50; *Capillus-Veneris*, 50; *pedatum*, 50
- Alectoria Fremontii f. perfertilis*, 10, subsp. *olivacea*, 10; *implexa f. fuscidula*, 10; *japonica*, 10; *jubata var. prolixa*, 10, var. *Vrangiana*, 10; *laeta*, 10; *lata*, 10; *ochroleuca*, 10; *ostetna*, 10; *sarmentosa*, 10, var. *gigantea*, 10; *Vrangiana*, 10
- Alizarin, effect of, on growth of *Endomyces capsulatus*, 529
- Allen, Caroline K. A monograph of the American species of the genus *Halenia*, 119
- Allomarkgrafia*, 625; *ovalis*, 626; *plumeriaeflora*, 627
- Ambyanthera*, 645; *acutiloba*, 649; *andina*, 665; *Andrieuxii*, 688; *angustifolia*, 640; *antennacea*, 741; *Benthamii*, 774; *Bogolensis*, 677; *brachyloba*, 670; *Bridgesii*, 693; *campestris*, 763; *ciliata*, 763; *citrifolia*, 638; *Claussenii*, 764; *congesta*, 676; *convolvulacea*, 687; *Cuyabensis*, 752; *Fendleri*, 758; *fluminensis*, 763, *a. Stadelmeyeri*, 763, *b. Clausenii*, 763; *foliosa*, 658; *fumiformis*, 697, *a. peduncularis*, 697, *b. brevipedunculata*, 697, *c. microphylla*, 697, *d. arenaria*, 697; *Guianensis*, 740; *hirsva*, 763; *hispida*, 763, *b. tomentosa*, 763; *Karwinskii*, 657; *membranacea*, 744; *mexicana*, 660; *microcalyx*, 744, *a. hirsuta*, 744, *b. trichantha*, 744, *c. leiophylla*, 744, *e. glabra*, 744; *Moritziana*, 768; *Oaxacana*, 686; *ovata*, 764; *palustris*, 763, *b. almadensis*, 763; *Pavonii*, 749; *Prieurei*, 740; *Schlismi*, 759; *Spruceana*, 776; *suareolens*, 695; *torosa*, 656; *tubiflora*, 648; *versicolor*, 752, *b. intermedia*, 755
- Amesia gigantea*, 802
- Ammonia in relation to growth of orchid seedlings, 234, 369
- Anartia Bogotensis*, 677
- Angadenia*, 645; *Prieurei*, 740; *reticulata*, 752
- Anisotobus Pohlianus*, 733
- Anonymus carolinensis*, 316
- Aphanostephus*, 23

ANN. MO. BOT. GARD., VOL. 20, 1933.

- Aplopappus gymnocephalus*, 797
- Apocynaceae*, Studies in the. IV, 605
- Aquilegia longissima*, 800
- Arabinose, growth of orchid seedlings in solutions containing, 574, 576
- Arctothecium vaginatum*, 799
- Arctostaphylos pungens*, 798
- Asclepias glaucescens*, 796
- Aspicilia calcarea*, 14
- Aspidium*, 66; *acrostichoides*, 63, var. *incisum*, 64; *schweinitzii*, 64
- Asplenium*, 51; *acrostichoides*, 55; *angustifolium*, 54; *Athyrium*, 55; *Bradleyi*, 51; *cryptolepis*, 51; *ebeneum*, 53; *ebenoides*, 52; *Filix-foemina*, 56; *Mitchaudia*, 56; *parrulum*, 53; *pinnatifidum*, 52; *platyneuron*, 53, var. *incisum*, 53; *pycnocarpon*, 54; *resiliens*, 53; *Ruta-muraria*, 52; *thelypteroides*, 55; *Trichomanes*, 54
- Astranthium*, 23, 29; *integerrifolium*, 34, 40, var. *ciliatum*, 35, 44, var. *rosulatum*, 36, 44; *mexicanum*, 32, var. *chihuahuense*, 32, 42; *mimum*, 30; *orthopodium*, 31; *purpurascens*, 33; *xanthocomoides*, 33; *xylopodum*, 31
- Astranthium* and related genera, 23
- Athyrium* 54; *acrostichoides*, 54; *angustifolium*, 54; *angustum*, 56, var. *elatius*, 56, var. *rubellum*, 56; *asplenoides*, 55; *Filix-foemina*, 55; *pycnocarpon*, 54; *thelypteroides*, 55
- Azolla*, 75; *caroliniana*, 75

B

- Bacidia fuscorubella*, 19; *minuscula* var. *Beckhausii*, 19
- Bellis*, 23; *Garciae*, 24; *perennis*, 23, 24, 40; *scandens*, 23
- Bellis*, 29; *campestris*, 23; *ciliata*, 35; *integerrifolia*, 34, 35, 36; *mexicana*, 31, 32; *nima*, 30; *nutans*, 34; *orthopoda*, 31; *parriflora*, 34; *pedunculata*, 23; *purpurascens*, 33; *xanthocomoides*, 33
- Berkley, Dorothy Megowen and Earl E. Super optimal and thermal death temperatures of the cotton plant as affected by variations in relative humidity, 583
- Bistorta helvola*, 19; *symmictera*, 19
- Billardiera*, 251; *explanata*, 316
- Blastomyces*, 103, 474; *dermatitidis*, 102, 104, 106
- Blastomycoïdes*, 85; *dermatitidis*, 104; *immuri*, 104; *tulanensis*, 104

(807)

- Blastomycosis: report of case, with a study of an etiologic factor and a classification of the organism, 79; animal inoculation, 95; cultural descriptions, 98; description, 96; differential diagnosis, 90; photographs of hands affected, 118; symptomatology, 89; technique, 95; treatment, 91
- Boerhaavia eriosolenus*, 799
- Botrychium*, 47; *dissectum*, 48; *obliquum*, 47, var. *dissectum*, 48, var. *tenuifolium*, 48, 78; *ternatum*, 47, var. *dissectum*, 48, var. *obliquum*, 47; *virginianum*, 48, var. *intermedium*, 49
- Bouchea spathulata*, 801
- Bourdonia*, 37; *bellidifolia*, 37; *effusa*, 38
- Brachycome zanthocomoides*, 33, 34; *zerantheoides*, 33
- Brickellia Coulteri*, 797; *Fendleri*, 797
- Bryophyta, new or rare, in flora of Texas, 795
- Buchnera canadensis*, 316
- Buddleia marrubifolia*, 799
- Buellia disciformis* var. *insignis*, 16, var. *minor*, 15; major, 16; *punctiformis*, 16
- C**
- Calcium, relation of growth of orchid seedlings to, 232, 366
- Campanula rotundifolia*, 797
- Camptosorus*, 57; *rhiophyllus*, 57
- Carbohydrate: reactions of Endomyces, 510; Sources of, for germination and growth of orchid seedlings, 569
- Carex eburnea*, 801; *microdonta*, 801
- Castillaria tricolor*, 19
- Cattleya Trianae, growth of seedlings of, 224, 363, 374, 574
- Ceratia*, 138
- Cerebrospinal meningitis, fatal, Endomyces capsulatus, a causative agent of, 471
- Cetraria*, 12; *aleurites*, 12; *californica* var. *Tuckermanii*, 11; *caperata*, 12; *chlorophylla*, 12; *chrysantha*, 12; *cucullata*, 11; *glauea*, 12, var. *stenocephylla*, 12; *islandica*, 11; *juniperina* var. *canadensis*, 12, var. *crispata*, 12, var. *viridis*, 12; *juniperina*, var. *terrestris*, 12, var. *virescens*, 12; *lacunosa* var. *Macounii*, 12; *Merrillii*, 11; *nigricans* var. *pallida*, 11; *nivalis*, 11; *norvegica*, 12; *pinastri*, 12; *platyphylla*, 13; *sutata*, 12; *tenuifolia*, 11, var. *pseudoislandica*, f. *septentrionalis*, 11, var. *reticulata*, 11; *Tilesii*, 12; *viridis*, 12
- Charioma nobilis*, 729
- Cheilanthes, 57; *alabamensis*, 57; *dealbata*, 61; *Feei*, 58; *lanosa*, 58; *languinosa*, 58; *vestita*, 58
- Chisos Mountains, 794
- Chlorine, relation of growth of orchid seedlings to, 371
- Cladonia*, 18; *alpestris*, 18; *bacillaris*, 18; *cariosa*, 18, f. *cribrosa*, 18; *cenotea* var. *crossota*, 18; *chlorophaeas*, 19; *cornuta*, 18; *crispata* var. *elegans*, 18, var. *infundibulifera*, 18; *cristatella*, 18; *deformis*, 18; *degenerans*, 18; *elongata*, 18, var. *ecmocyna*, 18; *fimbriata* var. *apolepta*, 19, var. *simplex* f. *major*, 19, f. *minor*, 19; *gracilis*, 18, f. *anthocephala*, 18, var. *dilatata*, 18; *pyxidata* var. *neglecta*, 19; *rangiferina*, 18, f. *nivea*, 18; *silvatica*, 18, var. *mitis*, 18; *subcervicornis* f. *turgescens*, 19; *uncialis*, 18; *verticillata*, 18
- Cladotrichia lanuginosa*, 796
- Clematis alpina*, 800
- Coccidioides*, 82; *immitis*, 85, 104
- Coccocarpia*, 441, 457; *albida*, 459, 466; *asterella*, 459; *cronia*, 458, 462, var. *camporum*, 458, var. *erythrocardia*, 458, var. *granulosa*, 458, 465, var. *isidiophylla*, 458, 463, var. *lividoruza*, 463, var. *primaria*, 463, var. *prolificans*, 458, 464; *dominguensis*, 459; *elegans*, 459, 466; *epiphylla*, 459; *fibrillosa*, 459; *molybdaea*, 457; *molybdaea* var. *cronia*, 461, 462 var. *tenuior*, 463; *parmelioidea* var. *cronia*, 462; *pellita*, 458, 459, var. *genuina*, 458, var. *lividoruza*, 458, var. *pannosa*, 458, var. *parmelioides*, 458, 459, var. *pyrrhocarpa*, 458, 460, var. *strigosa*, 458, 461; *pellita* var. *cronia*, 462, 463, var. *granulosa*, 465, var. *isidiophylla*, 463, var. *prolificans*, 464, var. *smaragdina*, 461, var. *tenuior*, 463; *portoricensis*, 458; *subtilis*, 458; *tenuissima*, 459
- Cocoonut fiber, growth of orchid seedlings in, 577
- Coenogoniaceae*, 394
- Coenogonium*, 395; *acrocephalum*, 396; *andinum*, 396, 399; *complexum*, 397; *confervoides*, 396, 399; *controversum*, 398; *depressum*, 397, 402; *dialeptizum*, 397; *disjunctum*, 396; *Echinus*, 396; *heterotrichum*, 396, 400; *implexum*, 402; *interplexum*, 397, 401; *interponendum*, 397, 400; *interpositum*, 396, 401; *Leprieurii*, 396, 397, var. *panniforme*, 397; *Leprieuri* var. *subvirescens*, 397; *Linkii*, 396, 398; *Linkii* var. *Leprieuri*, 397; *moniliforme*, 396, 397; *pannosum*, 397, 402; *pulvinatum*, 397; *subvirescens*, 396, 397; *Tuckermani*, 397
- Collema*, 404, 408; *baculiferum*, 409; subg. *Blennothallia*, 409; *bullatum*, 427, var. *dactyloideum*, 427, var.

seriatum, 428; *chilenum*, 409; subg. *Collemodiopsis*, 408, 409; *corynesporum*, 409; *crenatum*, 409; *cyrtaspis*, 409, 412; *diaphanum*, 421; subg. *Dicollema*, 409, 411; *glaucophthalmum*, 409, 413, var. *brasiliense*, 409, var. *granatense*, 409, 413, var. *typicum*, 409; *glaucophthalmum*, 413; *Granadillae*, 408, 410; *implicatum*, 409, 414; *Lactuca*, 408; *leptosporum*, 409; *leucocarpum*, 409; *leucosepula*, 409, 411; *lherminieri*, 408, 410; *mexicanum*, 409; *millegramum*, 409; *molecanum*, 436; *nigrescens*, 17, 409, var. *caesium*, 411; *nigrescens* var. *leucosepula*, 411; *oblique-peltatum*, 405; *olivaceum*, 424; *phyllocardium*, 428; *pyrenocarpoides*, 409; *pyrenocarpum*, 409, 411, 412, var. *crassiusculum*, 409, 412, var. *Malmei*, 409, 412, var. *Minarum*, 409, 411, var. *typicum*, 409; *pyrenocarpum*, 411, 412, f. *crassiusculum*, 412; *Ramboi*, 409, 415; *saturinum*, 422; *solenarium*, 409, *stellatum*, 409; subg. *Synechoblastus*, 409, 413; *turgidulum*, 409; *vesicatum*, 431

Collemaceae, 404

Coreopsis lanceolata, 797*Cornicularia divergens*, 11

Costa Rica: botanical exploration in, 385; floristics of, 390; the foliose and fruticose lichens of, I, 373; geography of, 376; map of, 376

Cotton plant, Super optimal and thermal death temperatures of, as affected by variations in relative humidity, 583

Crone's solution for growing orchids, 364

Cryptocephaceae, 104

Cryptocoecus, 82, 474; *dermatitidis*, 85, 103; *gilchristi*, 85, 103; *hominis*, 85Crystal violet, effect of, on growth of *Endomyces capsulatus*, 533*Cupressus arizonica*, 796*Cyanisticta Hookeri* var. *septentrionalis*, 17*Cystopteris*, 58; *bulbifera*, 59, var. *horizontalis*, 60, 78; *fragilis*, 58, 796

D

Davis Mountains, 793*Dennstaedtia*, 60; *punctilobula*, 60*Dichodium*, 407*Dicksonia*, 60; *pilosiuscula*, 60; *punctilobula*, 60*Dicollema*, 411*Dipladenia*, 645; *Achrestogyne*, 677; *acicularis*, 682; *acuminata*, 703; *albaviridis*, 690; *alexicaca*, 729; *androsaemifolia*, 729; *angustifolia*, 710; *atropurpurea*, 724; *atrovirulacea*, 724, f. *latifolia*, 724, l. *scandens*, 724, 2. *suberecta*, 724, 3. *cuneata*, 724, r. *cordata*, 724;

bella, 717; *boliviensis*, 716; *Buchtienii*, 730; *congesta*, 676; *crassinoda*, 703; *cuspidata*, 730; *eximia*, 706; *Fendleri*, 676; *fragrans*, 713, a. *oppositifolia*, 713, b. *ternatifolia*, 714; *Gardneriana*, 728, b. *grandiflora*, 728; *gentianoides*, 732, a. *velutina*, 732, a. * *longiloba*, 732, b. *glabra*, 733, 1. *ovata*, 733, 2. *ovata*, 733, b. * *longiloba*, 733, var. *Pohliana*, 733; *glabra*, 709; *illustris*, 728, a. *omentosa*, 728, a. *rotundifolia*, 728, 1. *hirsuta*, 728, 2. *pubescens*, 728, b. *eliptica*, 728, 1. *hirsuta*, 728, 2. *pubescens*, 728, c. *oblongifolia*, 728, f. *pilosa*, 728, b. *glabra*, 729, f. *glabra*, 729; *linariaefolia*, 679; *linearis*, 733; *longiloba*, 736; *Luetzelburgii*, 698; *Martiana*, 702, a. *pubescens*, 702, b. *glabra*, 703; *mollis*, 730; *Moricandiana*, 705; *myriophyllum*, 682; *nobilis*, 729; *oblongifolia*, 708; *pastorum*, 679, var. *tenuifolia*, 680; *peduncularis*, 679; *pendula*, 725; *piladenia*, 730; *Pohliana*, 733; *polymorpha*, 679, a. *tenuifolia*, 679, 1. *glabra*, 680, 2. *volubilis*, 680, 3. *puberula*, 680, b. *intermedia*, 680, r. *peduncularis*, 680, b. *brevifolia*, 680; *puellula*, 736; *Riedeli*, 714; *Rosa-campestris*, 728; *rotundifolia*, 730; *sancta*, 728; *Sanderi*, 720; *saponaria*, 735; *Saponariae*, 734; *scabra*, 717; *Sellowii*, 719; *spigeliae-flora*, 736, b. *longiloba*, 736; *splendens*, 707; *stenoloba*, 676; *surinamensis*, 704; *tenuifolia*, 679, 680, b. *puberula*, 679, r. *volubilis*, 679, f. *pastorum*, 680; *tetradenia*, 730; *upatae*, 704; *urophylla*, 722; *velutina*, 732; *venulosa*, 723; *vincae-flora*, 679; *xanthostoma*, 734, a. *major*, 734, b. *minor*, 734, f. *longiloba*, 736

Diploschistes bryophloides, 20; *candidens*, 20

Dodge, Carroll W. The foliose and fruticose lichens of Costa Rica. I, 373

Drymaria gracilis, 797*Dryopteris*, 66; *acrostichoides*, 63Dyes: effect of various, on growth of *Endomyces capsulatus*, 523

E

Echites, 629, 646, 777; *acuminata*, 635, 744; *acutiloba*, 649; *alexicaca*, 729; *almadenensis*, 763; *altescandens*, 741; *andina*, 665; *Andrieuxii*, 688; *angustifolia*, 640, 774; *antennacea*, 741; *apocynifolia*, 681; *arenaria*, 697; *assimilis*, 665; *atropurpurea*, 724; *atrovirulacea*, 724; *augusta*, 789; *auriculata*, 763; *Benthamii*, 774; *bicorniculata*, 634; *bogotensis*, 677; *Boliviiana*, 741; *brachyloba*, 670; *Brachysiphon*, 780;

- brachystachya*, 752; *bracteata*, 673, 761; *bracteosa*, 742; *breviflora*, 640; *brevipes*, 638; *Brownii*, 656; *campestris*, 762; *ciliata*, 763; *citrifolia*, 637; *Cobanensis*, 648; *coccinea*, 734, $\beta.$ *ovata*, 735; *comosa*, 747; *congesta*, 675; *convolvulacea*, 687; *cordata*, 686; *Coulteri*, 657; *crassinoda*, 703; *cuspidata*, 630; *cuspidifera*, 744; *Cuyabensis*, 752; *densiflora*, 688; *dichotoma*, 644; *disadena*, 630; *emarginata*, 672; *erecta*, 672; *Fluminensis*, 763, $\beta.$ *Claussenii*, 763; *fragrans*, 713; *Francisciæ* var. *palidiflora*, 764; *funiformis*, 697; *Ganbarica*, 697; *glandulosa*, 692; *glaucescens*, 686; *gracilis*, 743; *grandiflora*, 789, var. *major*, 789, var. *minor*, 787; *Guarantica*, 789; *Guayaquilensis*, 743; *Guanensis*, 740; *hirsuta*, 749, 762, $\alpha.$ *latifolia*, 763, $\beta.$ *angustifolia*, 750; *hirntella*, 686, 743; *hirtiflora*, 744; *hispida*, 763; *hypoleuca*, 781; *illustris*, 727; *japurensis*, 630; *jasminiflora*, 743; *Javitenensis*, 775; *Karwinskii*, 657; *Lambertiana*, 787; *lanuginosa*, 782; *lasiocarpa*, 750, $\beta.$ *angustifolia*, 750, $\gamma.$ *Lobbiana*, 750; *laza*, 695; *leptophylla*, 756; *linearifolia*, 640, 756; *longiflora*, 789; *macrophylla*, 678, 762; *Macrosiphon*, 783; *Mansoana*, 636; *Maranhensis*, 752; *Martiana*, 702; *membranacea*, 744; *mexicana*, 680; *microcalyx*, 744, $\beta.$ *glabra*, 744; *microphylla*, 697; *minima*, 643; *mollissima*, 751; *montana*, 664; *murronata*, 743; *multiflora*, 788; *myrtifolia*, 642; *Oaxacana*, 686; *obovata*, 705; *ovalis*, 626; *pallida*, 631; *palustris*, 763; *pastorum*, 679; *Pavonii*, 749; *peduncularis*, 679; *petraea*, 787; *pinnifolia*, 787; *Pohliana*, 732, var. $\alpha.$ *angustifolia*, 732, var. $\beta.$ *latifolia*, 732; *Prieurei*, 740; *pubescens*, 676; *pubiflora*, 752; *pulchella*, 736; *pycnantha*, 688; *pycnanthe*, 688; *repens*, 639; *Richardii*, 762; *rigida*, 631; *riparia*, 665; *Rosa-campestris*, 728; *Rosana*, 652; *rosea*, 642; *rugosa*, 754; *santa*, 726; *Sancias-Crucis*, 634; *scabra*, 752; *secundiflora*, 744; *Smithii*, 660; *speciosa*, 743; *spigeliaeflora*, 736; *splendens*, 707; *Stadelmeyeri*, 763; *suaveolens*, 695, 781; *subcarnosa*, 772; *subsagittata*, 743; *subcessilis*, 667; *subepicata*, 739; *surinamensis*, 630; *sympatocarpa*, 755; *tenuicaulis*, 752; *tenuiifolia*, 679; *tomentosa*, 762, $\beta.$ *laticordata*, 763; *torosa*, 656, var. *Brownii*, 656; *torulosa*, 642, 656; *trifida*, 630, 631, f. *puberula*, 635, var. *Sancias-Crucis*, 634; *tubiflora*, 648; *tubulosa*, 630; *Velame*, 788; *velutina*, 732; *venenosa*, 728; *Veraquazensis*, 690; *versicolor*, 752; *virens*, 784, 785; *xanthostoma*, 734
- Echitoideae, The American genera of, of Apocynaceae, 605
Eclipia integrifolia, 34
Endomyces capsulatus Rewbridge, Dodge & Ayers: a causative agent of fatal cerebrospinal meningitis, 471; animal inoculations, 543; carbohydrate reactions, 510; cultural characteristics, 494; cytology, 477; dyes, reaction to, 523; gelatine liquefaction, 519; historical review, 472; hydrogen sulphide production, 519; indol and skatol reactions, 517; light reactions, 520; nitrates, reduction of, 519; oxygen, free, relation to, 518
Endomyces, 82, 103; *capsulatus*, 471, 554, 556, 558, 560, 562, 566, 568, var. *isabellinus*, 472, 473, 564; dermatitis, 106, 116, 472
Endomycetaceae, 104
Eosine B, effect of, on growth of *Endomyces capsulatus*, 535
Ephebaceae, 402
Ephebia, 403
Equisetum, 69; *arvense*, 69; *hyemale* var. *robustum*, 70; *laevigatum*, 71; *praealtum*, 70; *robustum*, 70
Eriadenia, 645; *obovata*, 771
Erioderma, 440, 455; *Leylandi*, 455; *limbatum*, 455, 456; *microcarpa*, 455; *physcioides*, 451; *polycarpum*, 455; *pulebrum*, 455; *verruculosum*, 455; *Wrightii*, 455; *Wrightii* var. *limbatum*, 456
Eriogonum Havardii, 800; *pannosum*, 800
Eriogynia caespitosa, 800
Eupatorium Parryi, 797
Euphorbia eriantha, 798
Ezadenus, 138; *alatus*, 139; *brevicornis*, 140; *parviflorus*, 140, var. $\beta.$ *latifolius*, 142; *paucifolius*, 140
Ezatholemon, 645; *braceatum*, 761; *gracile*, 743; *Javitiense*, 775; *macrophyllum*, 762; *mollissimum*, 751; *speciosum*, 743
- F
- Fernaldia pandurata*, 777
Ferna and fern allies of Missouri, 45
Festuca ligulata, 801
Filtz, 59; *bulbifera*, 59; *fragilis*, 59
Fraseria speciosa, 798
Fructose, growth of orchid seedlings in solutions containing, 574, 575
- G
- Gabura*, 408
Galactose, growth of orchid seedlings in solutions containing, 574, 575

Gelatine liquefaction in cultures of *Endomyces capsulatus*, 519
Gentiana viridis, 151
Geranium caespitosum, 798
 Germination and growth of orchid seedlings, sources of carbohydrate for, 569
 Glucose, growth of orchid seedlings in solutions containing, 574, 579
Gonioinema, 403; *velutina*, 403
Graphis scripta, 20
 Guadalupe Mountains, 794

H

Haemadictyon glandulosum, 692
Halenia, A monograph of the American species of the genus *Halenia*, 119
Halenia, 137; *adpressa*, 148, 218; *alata*, 139, 214; *antigonorrhoea*, 202; *apiculata*, 178; *asclepiadea*, 205, 216; *asclepiadea*, 188; *barbicaulis*, 198, 220; *bella*, 206, 220; *bifida*, 201, 216; *Brentoniana*, 167; *brevicornis*, 140, 147, 214, var. *chihuahuensis*, 144, 214, var. *divergens*, 144, 214, var. *latifolia*, 141, 214, var. *micranthella*, 143, var. *multiflora*, 142, 214, var. *ovata*, 145, 214, var. *Tuerckheimii*, 145, 214; *caespitosa*, 184, 216; *caleoides*, 173, 214; *candida*, 161; *chlorantha*, 172; *Conzattii*, 171, 214; *crassiuscula*, 159, 214; *dasyantha*, 154, 218; *decumbens*, 178, 214; *deflexa*, 162, 214, 222, var. *Brentoniana*, 167; *Dombeyana*, 197, var. a, 194, 196, var. *brevicornis*, 182; *elata*, 155, 220; *elegans*, 203, 218; *elongata*, 175; *erythroides*, 140; *foliosa*, 153, 220; *gentianoides*, 152, 218; *gigantea*, 192, 218; *gracilis*, 186, 216, var. *Dombeyana*, 197; *guatemalensis*, 179, 214, var. *latifolia*, 180; sect. *Haleniastrum*, 158; *Hersogii*, 195; *heterantha*, 162; *Hieronymi*, 201; *Hoppii*, 204, 216; *hygrophila*, 156, 218; *hypericoides*, 184; *inaequalis*, 150, 218; *inaequalis*, 151; *Jamesoni*, 186; *Kalbreyeri*, 206, 218; *Karstenii*, 149, 218; *Killipii*, 187, 216; *longicornis*, 178; *macrantha*, 148; *major*, 158, 218; *Mathewssii*, 188; Meyeri Johannis, 197, 216; *Michauxiana*, 162; *micranthella*, 143; *minima*, 193, 216; *multiflora*, 142; *nudicaulis*, 174, 214; *nutans*, 175; *Palmeri*, 171, 214; *parallela*, 157, 218; *parviflora*, 140, var. *latifolia*, 142; *pauciflora*, 140; *Pavoniana*, 197; *penduliflora*, 194, 216; *phyteumoides*, 194; *pichinchensis*, 186; *pinifolia*, 185; *plantaginea*, 175, 214, f. *grandiflora*, 176, var. *latifolia*, 180; *platyphylla*, 173, 214; *Pringlei*, 160, 214; *pulchella*, 185, 220; *Purdieana*, 199, 218, var. *congesta*, 200, 216; *Purpusi*, 174; *pusilla*, 182, 216;

recurva, 161, 214; *reflexa*, 162; *rhyacophila*, 168, 214, var. *macropoda*, 170, var. *procumbens*, 170; *robusta*, 190, 216; *Rothrockii*, 161; *Rusbyi*, 199, 216; *scapiformis*, 174; *Schiedeana*, 172, 214; *Schultzei*, 151; *Shannonii*, 177, 214, f. *compacta*, 178; *silenooides*, 195, 216; *spatulata*, 183, 216; *sphagnicola*, 207; *stellaroides*, 152; *Stuebelii*, 190, 216; *subinvoluta*, 149, 220; sect. *Swertia*, 139; *taruga gasso*, 191, 218; *Tolimae*, 155, 218; *Tuerckheimii*, 145; *umbellata*, 196, 216; *valerianoides*, 182; *verticillata*, 153, 218; *vincetoxicoides*, 188, 216; *viridis*, 151, 220; *Weberbaueri*, 189, 216; *Weddelliana*, 202, 216

Helleranthus quadrangularis, 313

Heterothrix, 645; *pycnantha*, 668; *Vaneurckii*, 771

Hieracium carneum, 798

Hippochaete prealta, 70

Holoconis Leprieurii, 397

Holodiscus dumosus, 800

Homaladenia, 645; *brevifolia*, 680; *linariaefolia*, 680; *pastorum*, 680; *peduncularis*, 680; *puberula*, 680; *tenuifolia*, 680; *vincaeiflora*, 680

Humidity, relative, Super optimal and thermal death temperatures of the cotton plant as affected by variations in, 583

Hydrogen ion concentrations: of nutrient solutions in relation to growth of orchids, 227, 579; various, reaction of *Endomyces capsulatus* to, 502

Hydrogen sulphide production in *Endomyces capsulatus*, 519

Hymenopappus radiatus, 798

Hypopitys sanguinea, 799

I

Indol, reaction of, to *Endomyces capsulatus*, 517

Iron in nutrient solutions for orchids, 226, 365, 572

Isotetes, 74; Butleri, 75; Engelmanni, 74; melanopoda, 75

J

Juniperus flaccida, 796

K

Keeria, 37; *bellidifolia*, 37; *effusa*, 38; *linearifolia*, 33; *mexicana*, 31; *ramosa*, 24, 25; *skirrhobasis*, 24, 25

Knudson's solution for growing orchids, 365, 572, 574

Kujala, Dr. Viljo, lichens collected by, 7

L

- La Garde's solution for growing orchids, 226, 234, 363, 572, 578
Laphamia quinqueflora, 798
Lappula grisea, 797
 Larsen, Esther L. *Astranthium* and related genera, 23
Lasequea, 645; *acutifolia*, 673, f. *a.*
Guilleminiana, 674, 1. *Griseo-olivacea*, 674, 2. *Griseo-fusca*, 674, f. *b. obliquinervia*, 674, aa. *ovata*, 674, 1. *griseo-olivacea*, 674, *bb. obovata*, 674, f. *g.*
Glabrescens, 674, f. *d. scabrinervis*, 674, f. *e. glabra*, 674; *antennacea*, 741; *bracteata*, 671; *emarginata*, 673; *erecta*, 673, a. *Guilleminiana*, 673, 1. *griseo-olivacea*, 673, 2. *griseo-fusca*, 673, b. *obliquinervia*, 673, aa. *ovata*, 673, 1. *griseo-olivacea*, 673, *bb. obovata*, 673, *g. glabrescens*, 673, *dd. acutifolia*, 673, e. *scabrinervia*, 673, f. *glabra*, 673; *foliosa*, 658; *glabra*, 673; *Guilleminiana*, 672; *Hookeri*, 671; *Mandoni*, 671; *obliquinervia*, 673; *Pendlandiana*, 671; *subspicata*, 740; *venustula*, 740; *villosa*, 747
Lastrea, 66
Lathargium, 413
Lecania dimeria, 14
Lecanora collocarpa, 14; *subintricata*, 14; *symmicta*, 14; *umbrina*, 14
Lecidea goniophila, 19; *lapicida*, 19; *parmelioides*, 459
Lemmopsis polychidioides, 404
Lempholemma, 404; *compactum*, 404; *dichotomum*, 406; *Dussii*, 405; *oblique-peltatum*, 405
Lepidocollema carassense, 440
Lepidocollema americanum, 404; *Finkii*, 404
Leptodigidium byssoides, 403
Leptogium, 404, 416; *adpressum*, 418; *austroamericanum*, 419; *azureum*, 420, 433; *brasiliense*, 420; *bullatum*, 426; *callithamnum*, 418; *chloromelan*, 419; *chloromelanum*, 420; *conchatum*, 420; *coralloideum*, 419, 430; *corrugatum*, 431; *denticulatum*, 419, 432; *diaphanum*, 418, 421; *diaphanum* f. *corallioideum*, 430; *dimorphum*, 420; subg. *Diplothallus*, 418, 420; subg. *Euleptogium*, 418, 424; *foveolatum*, 418, 425; *fusisporum*, 418; *granulare*, 419; *Hildenbrandii* var. *papillosum*, 422; *hypotrachynum*, 419; *inflexum*, 418, 423, var. *isidiolum*, 418, 423; *laevius*, 420; *Lafayetteanum*, 420; *leptophylinum*, 432; subg. *Mallotium*, 418, 422; *marginellum*, 408, 419, 431; *matto-grossense*, 419; *megapotamicum*, 418; *microcarpum*, 419; *microstictum*, 418, 426; *moluccanum*, 436; *olivaceum*, 418, 424, var. *granulosum*, 424; *pachycheilum*, 420; *papillosum*, 418, 422; *phyllocarpum*, 419, 428, var. *campestre*, 419, 430, var. *macrocarpum*, 419, 429; *phyllocarpum* var. *coralloideum*, 430, var. *isidiolum*, 430; *pichneum*, 419; *pilecomayense*, 419; *Pungari*, 420; *pulchellum*, 420; *punctulatum*, 421; *resupinans*, 418; *reticulatum*, 418; *saturinum*, 17; *Schiffneri*, 420; *sessile*, 419; *simplicius*, 420, 437, var. *pichneoides*, 419, 438; *Standleyi*, 420, 435; *stellans*, 420; *stipitatum*, 418, 428; *tremelloides*, 17, 416; *tremelloides*, 435, var. *azureum* f. *isidiolum*, 432, var. *impressopunctatum*, 421, var. *leptophylinum*, 432, var. *minor*, 436; *Tuckermani*, 420, 436; *ulvaceum*, 420; *vesiculosus*, 418, 428, var. *digitatum*, 427
Letharia vulpina, 11, f. *compacta*, 11
Lichen flora of North America, Contribution to the, 7
Lichen *azureum*, 434; *bullatum*, 426; *crispus*, 408; *diaphanum*, 421; *marginalis*, 431; *melanocarpus*, 394; *pannosus*, 453; *velutinus*, 403; *vesiculosus*, 426
Lichens of Costa Rica, The foliose and fruticose, 373
 Light: white, effect of, on growth of *Endomyces capsulatus*, 521; of red, 522
Linum Schiedeanum, 799
Lithospermum viride, 797
Lobaria linita, 17; *oregana*, 17; *pulmonaria*, 17
Lobarina verrucosa, 17
Loeselia Greggii, 799
Lonicera arizonica, 797
Lorinseria areolata, 69
Lycopodium, 72; *complanatum* flabelliforme, 73; *lucidulum*, 73, var. *porophilum*, 73; *porophilum*, 73

M

- Macrosiphonia*, 777; *Balansae*, 788; *Berlandieri*, 783; *Brachysiphon*, 780; subgen. *Eumacrosiphonia*, 784; *Guarantica*, 789; *Hesperia*, 779; *hypoleucus*, 781; *lanuginosa*, 782; *longiflora*, 789; *longiflora* var. *Guarantica*, 790; *Macrosiphon*, 783; *Martii*, 784; *peduncularis*, 788; *petraea*, 786, var. *pinifolia*, 787, 788, var. *typica*, 787; *pinifolia*, 788, f. *glabrata*, 788, var. *intermedia*, 788, f. *peduncularis*, 788, f. *setosa*, 788; *prostrata*, 787; subg. *Telosiphonia*, 778; *Velame*, 788; *Velame* f. *goyazensis*, 788; *verticillata*, 786, a. *petraea*, 787, b. *intermedia*, 787, c. *peduncularis*, 787, d. *pinifolia*, 787; *virescens*, 785, var. *Misionum*, 785; *Wrightii*, 781

- Magnesium, relation of growth of orchid seedlings to, 231, 366
Mahonia repens, 796
Mallotum, 422
Malmella, 440, 447; *albida*, 448, 449; *caesiocinerea*, 448, 452; *physcioides*, 448, 451; *Randii*, 448; *Santamariae*, 448, 450
 Maltose, growth of orchid seedlings in solutions containing, 226, 574, 575
Mandevilla, 645; *Achrestogyne*, 677; *acutiloba*, 649; *albo-viridis*, 690; *aniceps*, 774; *Andrieuxii*, 645, 688; *angustifolia*, 710; *antennacea*, 741; *apocynifolia*, 660; *atroviolacea*, 724; *attenuata*, 761; *auriculata*, 764; *Bangii*, 693; *bella*, 717; *Benthamii*, 644, 774; *bogotensis*, 677; *Boliviiana*, 741; *boliviensis*, 716; *brachyloba*, 670; *bracteata*, 761; *bracteosa*, 742; *Bridgesii*, 693; *callacatensis*, 663; *callista*, 700; *cauensis*, 770; *cercophylla*, 669; *cereola*, 712; *coccinea*, 734; *congesta*, 675; *convolvulacea*, 687; *crassinoda*, 703; *cuspidata*, 730; *denticulata*, 764; *Dieliana*, 772; *Donnell-Smithii*, 650; *equatorialis*, 689; *erecta*, 672; subg. *Eumandevilla*, 647; *eximia*, 706; subg. *Exothostemon*, 737; *Fendleri*, 758; *fluminensis*, 764; *foliosa*, 658; *fragilis*, 667; *fragrans*, 713; *funiformis*, 697; *funiformis* var. *peduncularis*, 697; *glabra*, 709; *glabra*, 771; *glandulosa*, 692; *grata*, 696; *hirsuta*, 762; *hispida*, 764; *illustris*, 727, var. *glabra*, 729, var. *typica*, 727; *immaculata*, 721; *Jamesonii*, 666; *javitenensis*, 775; *Karwinskii*, 657; *lancifolia*, 773; *lasiocarpa*, 750; *laxa*, 695; sect. *laxae*, 682; *leptophylla*, 756; *linearis*, 733; *linearis*, 756; *Loeseneriana*, 690; *lucida*, 718; *Luetzelburgii*, 698; *Mandoni*, 693; *Martiana*, 702, var. *glabra*, 703, var. *typica*, 702; *mexicana*, 660; *minor*, 711; *mollissima*, 751; *montana*, 664; *montana* var. *peruviana*, 665; sect. *montanae*, 661; *Moricandiana*, 705, var. *bahiensis*, 706, var. *typica*, 705; *Moritziana*, 768; *Muelieri*, 717; *myriophyllum*, 682; *oaxacana*, 644, 686; *oblongifolia*, 708; *palustris*, 764; *parvifolia*, 753; *Pavonii*, 749; *pendula*, 725; *Pentlandiana*, 671; *permixta*, 715; *platydactyla*, 651; *polyantha*, 769; *polyantha*, 769; *potosina*, 777; *pycnantha*, 668; *riparia*, 665; *Rosana*, 652; *rugosa*, 754; *Rusbyi*, 764; *rutila*, 757; *sagittaria*, 768; *sancta*, 726; *Sanderi*, 720; *scaberula*, 761; *scabra*, 752; *Schlimgi*, 759; *Schlismii*, 759; *Schumanniana*, 686; *scutifolia*, 663; *Sellowii*, 719; *sertuligera*, 649, 654; *spigeliaeiflora*, 736; *splendens*, 707; *Spruceana*, 776; *suaveolens*, 695; *subcarnosa*, 644, 772; *subcarnosa*, 772; *subcordata*, 693; *subpaniculata*, 678; *subssigillata*, 644, 645, 743; *subcorpoidea*, 653; *subsessilis*, 667; *subspicata*, 645, 739; *superba*, 709; *surinamensis*, 704; *sympatocarpa*, 755; *Syrinx*, 649, 653; *tenuicarpa*, 741; *tenuifolia*, 679; sect. *tenuifoliae*, 679; *tomentosa*, 764, var. *hirsuta*, 764, var. *hispida*, 764, var. *Vahleana*, 764; *torosa*, 644, 656; sect. *torosa*, 655; *Triaenae*, 760; *tubiflora*, 648; sect. *tubiflorae*, 647; *Tweediana*, 695; *Ulei*, 771; *urophylla*, 722; *Vanheurckii*, 771; *velutina*, 731, var. *glabra*, 732, var. *typica*, 732; *velutina*, 777; *venulosa*, 723; *veraguensis*, 690; *veraguensis*, 690; *villosa*, 747
 Manganese sulphate in nutrient solutions, 226
 Mannose, growth of orchid seedlings in solutions containing, 574, 577
Matteuccia nodulosa, 65; *Struthiopteris*, 65
 Media, growth of *Endomyces capsulatus* in various, 494
 Meningitis, fatal cerebrospinal, *Endomyces capsulatus* as a causative agent of, 471
Menzelia asperula, 799
Mesechites, 629; *acuminata*, 635; *Andrieuxii*, 645, 688; *angustata*, 644, 775; *angustifolia*, 640; *bicorniculata*, 634; *brevipes*, 638; *Brownii*, 644, 656; *citrifolia*, 637; *dichotoma*, 644; subg. *Didymadenia*, 638; *disadena*, 631; subg. *Eumeeschites*, 630; *Guayaquilensis*, 644, 744; *Guanensis*, 645, 740; *hastata*, 644, 744; *hirtella*, 644, 744; *hirtellula*, 644, 686; *japurensis*, 630; *jasminiflora*, 644, 744; *lanceolata*, 639; *linearifolia*, 640; *Mansoana*, 636; *minima*, 643; *myrtifolia*, 642; *Oaxacana*, 644, 686; *repens*, 639; *rosea*, 641; *Sanctae-Crucis*, 634; *subcarnosa*, 644, 772; *sulphurea*, 636; *surinamensis*, 631; *torulosa*, 644, 656; *trifida*, 630, 644
 Methylene blue, effect of, on growth of *Endomyces capsulatus*, 534
Micradenia, 645; *atroviolacea*, 724; *crassidona*, 703; *fragrans*, 714; *hirsutula*, 702; *Martiana*, 702; *Moricandiana*, 706; *Riedelii*, 740; *Sellowii*, 719; *splendens*, 707; *urophylla*, 722
 Missouri, Ferns and fern allies of, 45; A neutral (?) strain of *Mucor sphaerosporus* from, 469
Milozus brachystachyus, 753; *brevipes*, 638; *Cuyabensis*, 753; *exilis*, 697; *funiformis*, 697; *Guanabaricus*, 697; *leptophyllus*, 756; *microphylla*, 697; *rugosus*, 755; *sympatocarpus*, 755; *tenuicaulis*, 753; *versicolor*, 752

- Monilia*, 82, 103
Moore, John Adam, Steyermark, Julian A. and. Report of a botanical expedition into the mountains of western Texas, 791
Moore, Morris. Blastomycosis: report of a case, with a study of an etiologic factor and a classification of the organism, 79; A neutral (?) strain of *Mucor sphaerosporus* from Missouri, 469; A study of *Endomyces capsulatus* Rewbridge, Dodge and Ayers: a causative agent of fatal cerebrospinal meningitis, 471
Mucor sphaerosporus from Missouri, A neutral (?) strain of, 469
Mycoblastus melinus, 19; *sanguinarius*, 19, var. *Dodgeanus*, 19
Mycoderma, 474
Mycoderma dermatitis, 103
- N**
- Nama Havardii*, 799; *xylopodum*, 799
Nephrodium, 66
Nephromium canadense, 17; *laevigatum* var. *papyraceum*, 17; *subparile*, 16
Nephromopsis ciliaris, 13; *platyphylla*, 13
Nerium sarmatiosum, 642
Nitrates, reduction of, in *Endomyces capsulatus*, 519
Nitrogen in relation to growth of orchid seedlings, 234, 368.
Nothochlaena pulchella, 61
Notholaena, 60; *dealbata*, 60; *Greggii*, 796; *nivea dealbata*, 61
Nutrient solutions for orchids, 225, 363, 571
Nutritional ions, The sensitivity of orchid seedlings to, 223
Nymphaea, A new yellow, from tropical Africa, 2
Nymphaea (§ *Brachyceras*) *Burttii*, 1, 6; *Stuhlmannii*, 3; *sulphurea*, 3
- O**
- Obletia*, 251
Ochrolechia upsaliensis, 14
Odontadenia cuspidata, 730; *glandulosa*, 692
Oidium, 82, 102, 474
Onoclea, 61; *sensibilis*, 61; *Struthiopteris*, 64
Oosporaceae, 104
Ophioglossum, 46; *Engelmanni*, 47; *vulgatum*, 46
Orbilia, 396
Orchid seedlings, Nutrient solutions for, 363; The sensitivity of, to nutritional ions, 223; Sources of carbohydrate for germination and growth of, 569
- Osmotic concentration*, relation of, to growth of orchid seedlings, 231
Osmunda, 71; *cinnamomea*, 72; *Clytoniana*, 72; *regalis spectabilis*, 71; *Struthiopteris*, 64
Ostrya Baileyi, 797
Oxygen, free, relation of *Endomyces capsulatus* to, 518
- P**
- Pannaria*, 440, 441; *applanata*, 441; *brasiliensis*, 442; *caeruleo-nigricans*, 442; *imbricatula*, 442; *isidioides*, 442, var. *pulvinata*, 443; *Malmei*, 441; *Mariana* var. *isidioides*, 442, f. *radiata*, 446; *Mosenii*, 442, 443; *radiata*, 442, 446; *rubiginosa*, 441; *rubiginosa*, 443, 445, f. *caesiocinerea*, 452, f. *cinerascens*, 452; *stylophora*, 442, 445; *Vainii*, 442, 445
Pannariaceae, 438
Parmelia ambigua, 13; *cronia*, 462; *Delavayi*, 13; *diaphana*, 421; *elegantula* var. *americana*, 14; *enteromorpha*, 13; *exasperatula*, 13; *hyperopta*, 13; *lividula*, 463; *lophyra*, 13; *molliscula*, 13; *pallescens*, 13; *papillosa*, 13; *pellita*, 459; *physodes* f. *labrosa*, 13, f. *vittata*, 13; *pubescens* var. *reticulata*, 14; *subaurifera*, 13; *sulcata*, 13; *vagans*, 13; *vittata*, 13
Parmeliella, 440, 452; *corallinoides*, 453; *microphyloides*, 453; *miradorensis*, 453; *nigrocincta*, 453, var. *Weddellii*, 453; *pannosa*, 453, var. *coralloides*, 454; *triptophylla*, 453
Parsonia bracteata, 671
Patinella, 396
Pellaea, 61; *atropurpurea*, 62, var. *Bushii*, 62, var. *cristata*, 62; *dealbata*, 61; *glabella*, 62
Peltigera aphthosa, 16; *canina*, 16, var. *membranacea*, 16, var. *suomensis*, 16; *horizontalis*, 16; *lepidophora*, 16; *malacea*, 16; *Maurizii*, 16; *microphylla*, 16; *Nylanderia*, 16; *perfida*, 16; *rufescens*, 16; *suomensis*, 16; *variolosa*, 16; *venosa*, 16
Pentoses, growth of orchid seedlings in, 576
Pentstemon baccharifolius, 801
Perityle Parryi, 798
Perry, Lily M. A revision of the North American species of *Verbena*, 239
Pertusaria amara, 14; *faginea*, 14; *multipuncta*, 14; *pertusa*, 14; *xanthostoma*, 14
Phegopteris, 66; *hexagonoptera*, 68
Phlyctis argena, 14
Phosphorus, growth of orchids in solution containing, 233, 367
Phryma carolinensis, 309
Physcia, 15; *adglutinata* var. *pyrithro-*

- cardia*, 15; *astroidea*, 15; *caesia*, 15; *Clementiana*, 15; *endophoenicea*, 15; *grisea* var. *semifarrea*, 15; *muscigena*, 15; *f. lenta*, 15; *f. squarrosa*, 15; *pyrithrocardia*, 15; *stellaris*, 15, var. *rosulata*, 15
Physma, 404; *Boryanum*, 407; *byrsinum*, 408; *pruinosum*, 408
Pilophoron aciculare, 17
Pinaropappus parvus, 798
Pinkerton, M. Elizabeth. Ferns and fern allies of Missouri, 45
Placodium chrysodetum, 15; *citrinum*, 15; *elegans*, 15; *ferrugineum*, 15; *xanthostigmoideum*, 15
Platysma septentrionale, 12
Polychidium, 403
Polygonatum rimulicola, 800
Polyodium, 62; *incanum*, 63; polypodioides, 63; *virginianum*, 63; *vulgare*, 63
Polystichum, 63, 66; *acrostichooides*, 63, var. *incisum*, 64, var. *Schweinitzii*, 64
Polystichum, 63
Potamogeton *clystocarpus*, 802; *diversifolius*, 802
Potassium in relation to growth of orchid seedlings, 231, 234, 361
Prestonia hirsuta, 749; *peruviana*, 692
Prestoniopsis Fendleri, 676; *hirsuta*, 676; *pubescens*, 676; *venosa*, 676
Pring, George H. and Robert E. Woodson, Jr. A new yellow *Nymphaea* from tropical Africa, 1
Prunus Havardii, 800
Psora decipiens, 19
Psoroma cinchonarum, 440
Pteretis, 64; *nudolosa*, 64
Pteridium, 65; *aquilinum*, 65; *latiusculum*, 65, var. *pseudocaudatum*, 65
Pteridophyta, new or rare, in Texas, 796
Pterigynopsis atra, 403
Pteris aquilina, 65
Pterospora Andromedea, 799
- Q**
- Quercus hypoleuca*, 798
- R**
- Raffinose, growth of orchid seedlings in solutions containing, 574
Ramalina calicaris, 11; *geniculata*, 11; *Roesleri*, 11; *thrausta*, 11
Räsänen, Veli J. P. B. Contribution to the lichen flora of North America, 7
Report of a botanical expedition into the mountains of western Texas, 791
Rhabdadenia campestris, 763
Rhamnose, growth of orchid seedlings in solutions containing, 574, 576
Rhamnus fasciculata, 800
Rhodocalyx coccineus, 734; *hypoleucus*, 781; *lanuginosus*, 782; *ovatus*, 735; *suaveolens*, 781; *Tweedianus*, 735
Ribes mescalense, 800
Riella americana, 795
Rinodina demissa, 15
Rio Grande, canyons of the, 794
Robinia luxurians, 799
Roccellaceae, 394
Rosa mirifica, 800
- S**
- Saccharomyctaceae*, 104
Saccharomyces, 82, 103, 474; *hominis*, 103
Salep, 577
Salt per cent, relation of growth of orchid seedlings to, 371
Scytemonium, 408
Secondaria stans, 659
Selaginella, 74; *apoda*, 74; *apus*, 74; *Pringlei*, 796; *rupestris*, 74
Sensitivity of orchid seedlings to nutritional ions, 223
Shive's solution for growing orchids, 572, 575
Shuttleworthia, 251
Siphula ceratites, 14
Sisymbrium diffusum, 798
Skatol, reaction of, to *Endomyces capsulatus*, 517
Sodium borate in nutrient solutions, 226
Solidago Wrightii, 798
Solorina saccata, 17
Sorghastrum nutans, 801
Spermatophyta, new or rare, in Texas, 796
Sphaerophoraceae, 393
Sphaerophorus globosus var. *lacunosus*, 20; *melanocarpus*, 394; *Tuckermanii*, 20
Sphenopholis obtusata, 801
Spilanthes, 23
Spiranthes saliens, 802
Sporotrichum, 82
Squamaria alphoplaca, 14
Staurothele circinata, 20
Stephanophorus, 424
Stereocaulon tomentosum, 14
Steyermark, Julian A., John Adam Moore and. Report of a botanical expedition into the mountains of western Texas, 791
Sticta scrobiculata, 17
Stictina fuliginosa, 17
Struthiopteris germanica, 65
Study Butte area, 794
Styleurodon carolinianum, 309
Sucrose, growth of orchid seedlings in solutions containing, 574, 576
Sugars, growth of orchid seedlings in solutions containing various, 226, 571
Sulphate, relation of growth of orchid seedlings to, 368

Super optimal and thermal death temperatures of the cotton plant as affected by variations in relative humidity, 583
Swertia, 138; *americana*, 162; *asclepiadea*, 205; *brevicornis*, 140; *corniculata*, 182; *cucullata*, 140; *deflexa*, 162; *gracilis*, 186; *hypericoides*, 184; *Michauxiana*, 162, 172; *parviflora*, 140, var. *angustifolia*, 140; var. *latifolia*, 142; *pinnifolia*, 185; *plantaginea*, 175; *quadricornis*, 205; *recurva*, 161; *umbellata*, 191
Symporicarpus rotundifolius, 797
Synechoblastus, 413

T

Temnadenia, 646; *cordata*, 686; *glaucescens*, 686; *lasiocarpa*, 750; *Lobbiana*, 750; *palidiflora*, 764; *palustris*, 764; *secundiflora*, 744; *tomentosa*, 764; *xanthostoma*, 735
 Temperature chamber for treating cotton plants, 585, 586
 Temperatures: reaction of *Endomyces capsulatus* to, 500; Super optimal and thermal death, of the cotton plant as affected by variations in relative humidity, 583
Tetragonanthus, 138; *alatus*, 139; *Brentonianus*, 167; *brevicornis*, 140; *decumbens*, 178; *deflexus*, 163, var. *Brentonianus*, 167, var. *heteranthus*, 163; *heteranthus*, 163; *longicornis*, 178; *Palmeri*, 171; *parviflorus*, 140; *paucifolius*, 140; *plantagineus*, 175; *Rothrockii*, 161; *Schiedeanus*, 172; *Whitei*, 188
 Texas: Report of a botanical expedition into the mountains of western, 791; species new or rare in the flora of, 795, additional records of interest, 802
Thamnolia vermicularis, 14
Thelypteris, 66; *hexagonoptera*, 68; *marginalis*, 67; *palustris pubescens*, 66; *spinulosa*, 67, var. *intermedia*, 67; *Thelypteris*, 66
Thermutis, 403; *velutina*, 403
Tillandsia recurvata, 801
Trachelospermum stans, 659
Tradescantia Wrightii, 801
Trentepohlia, 396

U

Usnea caucasica, 9; *comosa*, 9, var. *stuposa*, 9; *dasypoga*, 9, var. *subeckartiana*, 9; *hirta*, 9; *Kujalae*, 9; *laponica*, 9; *longissima*, 9; *prostrata*, 9; *rugulosa*, 9; *similis*, 9; *subcomosa*, 9
Uvarowia, 251

V

Valeriana texana, 801
Vauquelinia angustifolia, 800
Venturiella sinensis, 796
 Verbena, A revision of the North American species of, 239
Verbena, 251; *affinis*, 257; *Alopecurus*, 285; *ambrosifolia*, 326, f. *eglandulosa*, 328; *amoena*, 341; *Andrieuxii*, 333; *angustifolia*, 282; *arizonica*, 300, 337; *Aubletia*, 315, var. *Drummondii*, 316; *Aubletia* var. *Lamberti*, 343; *barbata*, 342; *bipinnatifida*, 323, var. *latifolia*, 325; *biserrata*, 268; *bonariensis*, 254; *bonariensis* var. *litoralis*, 257, var. *rigida*, 253; *bracteata*, 304, 358; *bracteosa*, 304, var. *albiflora*, 304, var. *brevibracteata*, 304; *brasiliensis*, 255; *brevibracteata*, 338; *canadensis*, 315, 358; *canadensis* var. *Ehrenbergii*, 318, subsp. *elegans*, 318, var. *Lamberti*, 316; *canescens*, 301, var. *Roemeriana*, 302; *canescens*, 304, var. *neomexicana*, 296; *caracasana*, 257; *carnea*, 309; *carolina*, 268; *caroliniana*, 268, 309, f. or var. *polystachya*, 268, f. or var. *recta*, 271; *carolinensis*, 309; *ciliata*, 330, var. *longidentata*, 331, var. *pubera*, 332; *confinis*, 304; *cuneifolia*, 286; *delicatula*, 342; *delticola*, 314; *diffusa*, 275; *domingensis*, 262; *Drummondii*, 316; *Ehrenbergiana*, 267; *elegans*, 318, var. *asperata*, 319; *elongata*, 254; *erinoides*, 341; *eridis*, 334; *Gooddingii*, 335, var. *neptifolia*, 337; *gracilis*, 300; *grandiflora*, 341; *grandiflora*, 342; *Halei*, 265; *Hansenii*, 257; *hastata*, 278; *hastata* var. *oblongifolia*, 267, var. *paniculata*, 278, f. *rosea*, 278, var. *pinnatifida*, 278; *hirsuta*, 268; *imbricata*, 304; *incarnata*, 342; *inconspicua*, 338; *integrifolia*, 342; *Lamberti*, 316, var. *rosea*, 316; *lasiostachys*, 290; *leucanthemifolia*, 265; *lilacina*, 340; *litoralis*, 257; *litoralis* var. *brasiliensis*, 255, var. *caracasana*, 257; *litoralis* β , *leptocephala*, 257, a. *pycnostachya*, 257; *longiflora*, 315; *longifolia*, 272; *Lucaeana*, 293; *MacDougalii*, 288; *MacDougalii* mut. *rosella*, 288; *macrodonta*, 289, 358, 360; *maritima*, 320; *Matthesii*, 342; *menthaefolia*, 263; *mollis*, 268, 286; *moranensis*, 318; *neomexicana*, 296, var. *hirtella*, 298, var. *xylopoda*, 297; *Oblaetia*, 315; *Obletia*, 315; *officinalis*, 262; *officinalis* var. *hirsuta*, 296; *Orcuttiana*, 284; *paniculata*, 278, var. *pinnatifida*, 278; *pauciflora*, 268; *paucifolia*, 268; *paucifolia*, 342; *perennis*, 299; *pinnatifida*, 278; *plicata*, 294; *polystachya*, 268; *prostrata*, 290; *pu-*

bera, 332; *pulchella*, 332; *pumila*, 338; *pumila* f. *albiflora*, 313; *quadrangularis*, 254; *quadrangulata*, 313; *race-mosa*, 332; *recta*, 271; *remota*, 300; *repens*, 342; *rigens*, 286; *rigida*, 252; *riparia*, 267; *robusta*, 292; *Roemeriana*, 302; *rubra*, 316; *rudis*, 304; *rugosa*, 282; *scabra*, 272; *scabra*, 272; *scabrella*, 343; *setacea*, 339, 362; *setosa*, 263; *simplex*, 282; *sphaerocarpa*, 256; *spuria*, 262; *squarrosa*, 304; *stricta*, 285; *stricta* f. *albiflora*, 286, β ? *mollis*, 286, f. *roseiflora*, 286; *strigosa*, 293; *subuligera*, 303; *tampensis*, 321; *teucriifolia*, 334, var. *corollulata*, 335; *trifida*, 342; *tumidula*, 322; *urticifolia*, 275; *urticifolia* var. *riparia*, 267, var. *simplex*, 275; *venosa*, 252; *verna*, 337, var. *jissa*, 335; *veronicaefolia*, 268; Wrightii, 328, 358; *xutha*, 293

W

Woodisia, 68; *obtusa*, 68
Woodson, Robert E., Jr. Studies in the Apocynaceae. IV, 605; George H.

Pring, and. A new yellow *Nymphaea* from tropical Africa, 1
Woodwardia, 69; *angustifolia*, 69; *aerolata*, 69
Wynd, F. Lyle. Nutrient solutions for orchids, 363; The sensitivity of orchid seedlings to nutritional ions, 223; Sources of carbohydrate for germination and growth of orchid seedlings, 569

X

Xanthocephalum, 24; *linearifolium*, 25
Xanthoria polycarpa, 15
Xylose, growth of orchid seedlings in solutions containing, 574, 576

Y

Yeast-like organisms, 471; cytology of, 477

Z

Zapania bracteosa, 304
Zygadenus elegans, 801